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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,281	02/01/2002	Max Friedheim	1776-11	2057

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EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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12/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/066,281	Applicant(s) FRIEDHEIM, MAX	
	Examiner Sang Y. Paik	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification lacks proper antecedent basis for "the liquid supply means" and the recited term "simultaneous" reflected output of the superheated vapor.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what element is meant by "liquid supply means". Does this term refer to a source of the liquid supply or the means by the liquid is supplied? It is also noted that since the recited "liquid supply means" is not followed by a specific function to be performed, it is not interpreted as the means-plus function. The liquid supply means then is interpreted as a source of liquid supply.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 and 11-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedheim (US 5,471,556) or Friedheim (US 4,414,037) in view of Hutchinson (US 6,393,212).

Friedheim '556 or Friedheim '037 shows the vapor generator claimed including a vaporization chamber wherein the liquid upon its entry therein is instantaneously superheated, a volume of liquid provided to the vapor generator by a pump for a controlled stream of vapor at the desired pressure and pressure (see column 1, lines 37-42 of Friedheim '037), the chamber having an interior surface with grooves or perforations, respectively. The grooves have the depth in the range of 0.030-0.050 inch.

Neither Friedheim '556 nor Friedheim '037 explicitly shows the liquid supply means and the control means to control the input liquid during the ongoing input of the liquid, but Friedheim '556 and '037 show the pump for supplying a volume of liquid into the vapor generator to instantaneously vaporize the liquid, and Friedheim '037 also teaches that the pump supplies a metered amount of liquid.

Hutchinson discloses a vapor generator having a vaporization chamber, the input port, the adjustable control means such as the control means (22) connected to the pump (20) for controlling the input liquid into the vaporization chamber to further control the pressure and volume of the output steam.

In view of Hutchinson, it would have been obvious to one of ordinary skill in the art to adapt Friedheim '556 or Friedheim '037 with the control means to adjustably control the pump to provide the desired metered amount of liquid to achieve the desired controlled superheated steam during the ongoing input of the liquid during the operating process.

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedheim '556 or Friedheim '037 in view of Hutchinson as applied to claims 1-8 and 11-27 above, and further in view of Berthoud (US 3,863,841).

Friedheim '556 or Friedheim '037 in view of Hutchinson discloses the vapor generator claimed except the output control means that can is adjustable to direct the vapor in a plurality of selected positions and the plurality of valves that are adjustable to direct the vapor in substantially perpendicular directions.

Berthoud shows a nozzle output control means that is adjustable to direct the output in a plurality of selected positions with a plurality of valves. In view of Berthoud, it would have been obvious to one of ordinary skill in the art to adapt Friedheim '556 or Friedheim '037, as modified by Hutchinson, with the output control means that is adjustable to direct the output steams in a plurality of selected positions so that the output steams may conveniently be directed in the desired directions of the user.

Response to Arguments

7. Applicant's arguments filed 9/24/07 have been fully considered but they are not persuasive. The applicant argues since Hutchinson shows the adjustable control means that is a slow step by step process, it does not teach the virtually instantaneously process in the applicant's invention. This argument is not deemed persuasive since Hutchinson is not applied to teach the instantaneous process of the steam boiler but the teaching of controlling the output by controlling the input of the liquid. The instantaneous surperheating of the steam is performed by the Friedheim devices, and especially when Friedheim '037 teaches for a metered amount of liquid input provided to the vapor generator, it would have been obvious to modify the Friedheim

devices in view of the Hutchinson' teaching of controlling the output by controlling its input. The applicant's stated slow process of Hutchinson does not teach away the process of the controlling the output by controlling its input.

Also, the applicant also argues Hutchinson teaches the use of an output variable pressure valve to control the steam output which is contrary to the applicant's invention. This argument is not deemed persuasive since the claimed invention also discloses the control output pressure relief to control its output.

The declaration by Terry Munson has been considered by the examiner for the applicant's support of the long-felt unsolved need and also noted by the examiner that the long-felt unsolved need was to the importance of the controlling the precise amount of superheated steam and its velocity and so on. However, it is noted that devices of Friedheim ' 556 and '037 would have achieved such desired superheated steam with the control means using pumps that supplied a metered amount of liquid. Furthermore, the claims are directed, in short analysis, the controlled output by the controlled input, given the superheated vapor generator known by Friedheim. It is unclear if the declaration supports how this controlled input/output was a long felt need that was unsolved. Thus, this declaration does not seem to sufficiently provide an evidence to support the long-felt unsolved need.

With respect to the Berthoud reference, the applicant argues that this reference is in a wholly different field and that no explicitly analysis is provided to show the apparent reason or any motivation or suggest to combine with the Friedheim and Hutchinson references. It is noted that Berthoud is in the same field of endeavor which involves the devices of controlling the output direction of gases. By adapting the output valves of Berthoud, the output direction of the

steam of Friedheim would have been further controlled in the predictable result as intended by the applicant.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (6:30-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sang Y Paik
Primary Examiner
Art Unit 3742

syp